

10/018094

JO Rec'd PCT/PTO 14 DEC 2001

(Nucleotide) FASTA of: Hn540-1.Dna from: 1 to: 3705 September 25, 19100 23:27

REFORMAT of: Hn540-1.Dna check: 5366 from: 1 to: 3705 September 25, 19100
13:37

(No documentation)

TO: @USER_DISK:[Z8SE007]134608.\$TMP Sequences: 7,218,604 Symbols: -151,773,6
69 Word Size: 6

Sequences too short to analyze: 62 (231 symbols)

Databases searched:

EMBL, Release 63.0, Released on 10Jun2000, Formatted on 10Jul2000

EMBL, Release 63.0, Released on 17Jun2000, Formatted on 17Jul2000

EMBL, Release 63.0, Released on 25Jun2000, Formatted on 25Jul2000

EMBL, Release 63.0, Released on 6Jun2000, Formatted on 6Jul2000

EMBL, Release 63.0, Released on 14Jun2000, Formatted on 14Jul2000

EMBL, Release 63.0, Released on 19Jun2000, Formatted on 19Jul2000

EMBL, Release 63.0, Released on 20Jun2000, Formatted on 20Jul2000

EMBL, Release 63.0, Released on 11Jun2000, Formatted on 11Jul2000

EMBL, Release 63.0, Released on 18Jun2000, Formatted on 18Jul2000

GeneSeq, Release 40.4, Released on 22Jun2000, Formatted on 22Jun2000

EMBL, Release 63.0, Released on 3Jun2000, Formatted on 3Jul2000

EMBL, Release 63.0, Released on 4Jun2000, Formatted on 4Jul2000

EMBL, Release 63.0, Released on 5Jun2000, Formatted on 5Jul2000

EMBL, Release 63.0, Released on 7Jun2000, Formatted on 7Jul2000

Searching with both strands of the query.

Scoring matrix: GenRunData:Fastadna.Cmp

Constant pamfactor used

Gap creation penalty: 16 Gap extension penalty: 4

Results sorted a z-values calculated from initial score
1673 scores saved that exceeded 116, Joining threshold: 91, opt. width: 16

The best scores are: init1 initn opt z-sc E(14420799)...

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Emrod:Af125521   Begin: 1   End: 3705
! Af125521 Rattus norvegicus nephrin ...18525 18525 18525 25999.4      0
Emrod:Af161715   Begin: 458   End: 4162
! Af161715 Rattus norvegicus nephrin ...18452 18452 18453 25893.3      0
Emrod:Af168466   Begin: 24   End: 3481

! Af168466 Mus musculus nephrin (Nphs...14308 15239 14974 21379.6      0
Emhum1:Af035835   Begin: 24   End: 3497
! Af035835 Homo sapiens nephrin (NPHS...11557 12214 12066 17125.7      0
Gcg_Geneseq_D:Z25338   Begin: 24   End: 3497
! Human nephrin nucleotide sequence. ...11557 12214 12066 17125.7      0
Emhum3:Hsac2133   Begin: 14708   End: 14893   Strand: -
! Ac002133 Human DNA from chromosome ... 651 4463 651 6211.3      0
Emhtg5:Ac022315   Begin: 169005   End: 169234
! Ac022315 Homo sapiens chromosome N/... 653 2207 700 3028.6      0
Emhum6:Hsu95090   Begin: 33243   End: 33369   Strand: -
! U95090 Homo sapiens chromosome 19 c... 448 1773 455 2430.1      0

Emest_Mam:Aw347107   Begin: 1   End: 426
! Aw347107 30251 MARC 1PIG Sus scrofa... 1431 1431 1437 1983.9      0
Emgss6:Aq522774   Begin: 252   End: 437
! Aq522774 HS_5221_B1_E10_T7A RPCI-11... 586 956 603 1314.0      0
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Hn540-1.Dna

Emrod:Af125521

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ID   AF125521   standard; RNA; ROD; 3705 BP.
AC   AF125521;
SV   AF125521.1
DT   23-NOV-1999 (Rel. 61, Created)
DT   23-NOV-1999 (Rel. 61, Last updated, Version 1)
DE   Rattus norvegicus nephrin mRNA, complete cds.
KW   .
OS   Rattus norvegicus (Norway rat)
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia;

OC   Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.

RN   [1]
RP   1-3705
RX   MEDLINE; 99419288.
RA   Ahola H., Wang S.X., Luimula P., Solin M.L., Holzman L.B., Holthofer H.;
RT   "Cloning and expression of the rat nephrin homolog";
RL   Am. J. Pathol. 155(3):907-913(1999).
RN   [2]
RP   1-3705
RA   Ahola H., Wang S.-X., Luimula P., Solin M.-L., Holzman L.B., Holthofer H.;
RT   ;
RL   Submitted (03-FEB-1999) to the EMBL/GenBank/DDBJ databases.
RL   Haartman Institute/ Division of Bacteriology and Immunology, University of
RL   Helsinki, P.O. Box 21 (Haartmaninkatu 3), Helsinki 00014, Finland
DR   SPTREMBL; Q9R044; Q9R044.
FH   Key          Location/Qualifiers
FH
FT   source          1. .3705

FT          /db_xref="taxon:10116"
FT          /organism="Rattus norvegicus"
FT          /strain="Sprague-Dawley"
FT          /tissue_type="kidney glomeruli"
FT          /dev_stage="one month"
FT   CDS          1. .3705
FT          /codon_start=1
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FT      /db_xref="SPTREMBL:Q9R044"
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FT      /protein_id="AAF12734.1"
FT      /translation="MSSLTPLLMLTSGLAESPVPTSAPRGFWALSENLTAVEGTTV
FT      KLWCGVRAPGSVVQWAKDGLLLGPNPKMPGFPRYSLEGDRAKGEFHLLIEACDLSDDAE
FT      YECQVGRSELGPELVSPKVIILSVSPKVLTLTPEAGSTVTWVAGQEYVVTCVSGDAKP
FT      APDITFIQSGRTILDVSSNVNEGSEEKLCITEAEARVIPQSSDNGQLLVCEGSNPALDT
FT      PIKASFTMNILFPPGPPVIDWPGLNEGHRAGENLELPCTARGGNPPATLQWLKNGKPV
FT      STAWGTEHAQAVAHSVLVMTVRPEDHGARLSCQSYNSVSAGTQERSITLQVTFPPSAIT
FT      ILGSVSQSENKNVTLCCLTKSSRPVLLRWLWLGGRQLLPTDETVM DGLHGGHISMSNLT
FT      FLVRREDNGLPLTCEAFSDAFSKETFKKSLTLNVKYPQKWLWIEGPPEGQYIRTGTRVR
FT      LVCLAIGGNPDPSLIWFKDSRPVSEPRQPQEP RRVLGVSVEKSGSTFSRELVLIIIGPPD
FT      NRAKFSCKAGQLSASTQLVVQFPPTNLTLANSSALRPGDALNLTCVSISSNPPVNL SW
FT      DKEGERLEDVAAKQPSAPFKGSAASRSVFLRVSSRDHGQRVTCRAHSEALRETVSSFYR
FT      FNVLYPPEFLGEQVRAVTVVEQGQVLLPVSVSANPAPEAFNWTFRGYRLSPAGGPRHRI
FT      LSGGALQLWNVTRADDGFYQLHCQNSEGTAEALLKLDVHYAPTIRALRDPTEVNVGGSV
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SCORES Init1: 18525 Initn: 18525 Opt: 18525 z-score: 25999.4 E(): 0
100.0% identity in 3705 bp overlap

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Af125521	ATGTCCAGTTTGACTCCCCTGCTGCTCATGGGAATGCTGACCTCAGGCCTGGCCGAGTCG					
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	70	80	90	100	110	120
Hn540-1.Dna	CCAGTCCCCACCTCAGCACCTCGAGGCTTCTGGGCTCTGTCTGAAAACCTGACTGCGGTG					
Af125521	CCAGTCCCCACCTCAGCACCTCGAGGCTTCTGGGCTCTGTCTGAAAACCTGACTGCGGTG					
	70	80	90	100	110	120
	130	140	150	160	170	180
Hn540-1.Dna	GAAGGGACAACAGTTAAGCTATGGTGCGGTGTCAGGGCCCCCTGGCAGTGTGGTGCA GTGG					
Af125521	GAAGGGACAACAGTTAAGCTATGGTGCGGTGTCAGGGCCCCCTGGCAGTGTGGTGCA GTGG					
	130	140	150	160	170	180
	190	200	210	220	230	240
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Af125521	GCTAAGGATGGGCTGCTTCTGGGTCCAAACCCGAAGATGCCAGGCTTCCCAGGTACAGC					
	190	200	210	220	230	240
	250	260	270	280	290	300
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Af125521	CTGGAAGGAGATCGTGCTAAAGGCGAGTTCCACCTGCTTATTGAAGCCTGTGACCTCAGT					
	250	260	270	280	290	300
	310	320	330	340	350	360
Hn540-1.Dna	GATGACGCAGAGTATGAATGCCAAGTCGGCCGCTCAGAGTTGGGTCCCGAGCTTGTGTCT					

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Af125521  GATGACGCAGAGTATGAATGCCAAGTCGGCCGCTCAGAGTTGGGTCCCGAGCTTGTGTCT
              310      320      330      340      350      360
Hn540-1.Dna      370      380      390      400      410      420
CCTAAAGTAATCCTCTCCATTCTAGTTTCCCCCAAGGTGCTTCTGTTGACCCCCGAGGCA
|||||
Af125521  CCTAAAGTAATCCTCTCCATTCTAGTTTCCCCCAAGGTGCTTCTGTTGACCCCCGAGGCA
              370      380      390      400      410      420
Hn540-1.Dna      430      440      450      460      470      480
GGAAGCACAGTGACCTGGGTAGCTGGGCAGGAGTATGTGGTCACCTGTGTGTCTGGGGAT
|||||
Af125521  GGAAGCACAGTGACCTGGGTAGCTGGGCAGGAGTATGTGGTCACCTGTGTGTCTGGGGAT
              430      440      450      460      470      480
              490      500      510      520      530      540
Hn540-1.Dna      GCAAAAACCAGCACCTGACATCACCTTCATCCAGAGTGGACGAACTATATTGGACGTCTCC
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Af125521  GCAAAAACCAGCACCTGACATCACCTTCATCCAGAGTGGACGAACTATATTGGACGTCTCC
              490      500      510      520      530      540
Hn540-1.Dna      550      560      570      580      590      600
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Af125521  TCCAATGTGAATGAGGGATCAGAGGAGAACTCTGCATCACAGAGGCCGAAGCCAGGGTG
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Hn540-1.Dna      610      620      630      640      650      660
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|||||
Af125521  ATACCCCAGAGCTCGGATAACGGGCAGTTACTGGTCTGTGAGGGTTCCAACCCAGCTTTG
              610      620      630      640      650      660
Hn540-1.Dna      670      680      690      700      710      720
GACACTCCCATAAAGGCTTCATTACCATGAATATTCTGTTTCCCCCAGGACCTCCTGTC
|||||
Af125521  GACACTCCCATAAAGGCTTCATTACCATGAATATTCTGTTTCCCCCAGGACCTCCTGTC
              670      680      690      700      710      720
Hn540-1.Dna      730      740      750      760      770      780
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|||||
Af125521  ATTGATTGGCCAGGCCTGAATGAAGGGCATGTGAGGGCAGGGGAGAACCTGGAGCTGCCC
              730      740      750      760      770      780
Hn540-1.Dna      790      800      810      820      830      840
TGCACAGCCAGAGGTGGCAATCCACCTGCTACCCTGCAGTGGCTGAAGAACGGTAAACCA
|||||
Af125521  TGCACAGCCAGAGGTGGCAATCCACCTGCTACCCTGCAGTGGCTGAAGAACGGTAAACCA
              790      800      810      820      830      840
Hn540-1.Dna      850      860      870      880      890      900
GTGTCCACAGCCTGGGGCACCAGCATGCCAGGCAGTGGCCCACAGTGTGCTGGTGATG
|||||
Af125521  GTGTCCACAGCCTGGGGCACCAGCATGCCAGGCAGTGGCCCACAGTGTGCTGGTGATG
              850      860      870      880      890      900
Hn540-1.Dna      910      920      930      940      950      960
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Af125521  ACTGTACGACCTGAAGACCATGGAGCTCGGCTCAGCTGTCAGTCCTACAACAGCGTGTCT
              910      920      930      940      950      960
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Af125521	GCAGGGACCCAGGAGAGAAGCATCACACTACAGGTCACCTTTCCCCCAAGCGCCATTACC						
		970	980	990	1000	1010	1020
		1030	1040	1050	1060	1070	1080
Hn540-1.Dna	ATCCTGGGATCTGTATCACAATCGGAGAACAAGAACGTGACCCTTTGCTGCCTGACCAAG						
Af125521	ATCCTGGGATCTGTATCACAATCGGAGAACAAGAACGTGACCCTTTGCTGCCTGACCAAG						
		1030	1040	1050	1060	1070	1080
		1090	1100	1110	1120	1130	1140
Hn540-1.Dna	TCCAGTCGCCCACGGGTCCTGCTGCGATGGTGGTTGGGTGGACGGCAGCTGCTGCCACACA						
Af125521	TCCAGTCGCCCACGGGTCCTGCTGCGATGGTGGTTGGGTGGACGGCAGCTGCTGCCACACA						
		1090	1100	1110	1120	1130	1140
		1150	1160	1170	1180	1190	1200
Hn540-1.Dna	GATGAGACAGTCATGGATGGCCTGCATGGTGGCCACATCTCCATGTCCAATCTCACATTC						
Af125521	GATGAGACAGTCATGGATGGCCTGCATGGTGGCCACATCTCCATGTCCAATCTCACATTC						
		1150	1160	1170	1180	1190	1200
		1210	1220	1230	1240	1250	1260
Hn540-1.Dna	TTGGTGCGGAGAGAAGACAATGGCCTGCCCCCTCACGTGTGAAGCCTTCAGTGACGCCTTC						
Af125521	TTGGTGCGGAGAGAAGACAATGGCCTGCCCCCTCACGTGTGAAGCCTTCAGTGACGCCTTC						
		1210	1220	1230	1240	1250	1260
		1270	1280	1290	1300	1310	1320
Hn540-1.Dna	AGCAAGGAGACCTTCAAGAAGTCACTCACCTTGAATGTGAAATACCCTGCCAGAAAGCTG						
Af125521	AGCAAGGAGACCTTCAAGAAGTCACTCACCTTGAATGTGAAATACCCTGCCAGAAAGCTG						
		1270	1280	1290	1300	1310	1320
		1330	1340	1350	1360	1370	1380
Hn540-1.Dna	TGGATTGAGGGGCCCCCAGAGGGACAGTACATCCGGACTGGGACTCGGGTGAGGCTGGTA						
Af125521	TGGATTGAGGGGCCCCCAGAGGGACAGTACATCCGGACTGGGACTCGGGTGAGGCTGGTA						
		1330	1340	1350	1360	1370	1380
		1390	1400	1410	1420	1430	1440
Hn540-1.Dna	TGCTTGGCCATCGGAGGCAACCCAGACCCCTCCCTCATCTGGTTTAAGGATTACGTCCG						
Af125521	TGCTTGGCCATCGGAGGCAACCCAGACCCCTCCCTCATCTGGTTTAAGGATTACGTCCG						
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		1450	1460	1470	1480	1490	1500
Hn540-1.Dna	GTGAGCGAGCCCCGGCAGCCCCAGGAGCCCCGGCGTGTGCAGCTGGGCAGTGTGGAGAAG						
Af125521	GTGAGCGAGCCCCGGCAGCCCCAGGAGCCCCGGCGTGTGCAGCTGGGCAGTGTGGAGAAG						
		1450	1460	1470	1480	1490	1500
		1510	1520	1530	1540	1550	1560
Hn540-1.Dna	TCCGGGAGCACTTTCTCCCGCGAGCTGGTGGTGGATCATAGGTCCGCCGGACAACCGAGCC						
Af125521	TCCGGGAGCACTTTCTCCCGCGAGCTGGTGGTGGATCATAGGTCCGCCGGACAACCGAGCC						
		1510	1520	1530	1540	1550	1560
		1570	1580	1590	1600	1610	1620
Hn540-1.Dna	AAGTTCTCCTGCAAGGCGGGTCAGCTCAGTGCCTCTACGCAGCTGGTGGTGCAGTTCCCC						

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Af125521      AAGTTCCTCGCAAGGCGGGTCAGCTCAGTGCCTCTAGCAGCTGGTGGTGCAGTTCCCC
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Hn540-1.Dna   1630          1640          1650          1660          1670          1680
CCAACCAACCTGACCATCCTGGCCAACTCGTCCGCGCTGCGCCAGGCGACGCCTTGAAC
|||||
Af125521      CCAACCAACCTGACCATCCTGGCCAACTCGTCCGCGCTGCGCCAGGCGACGCCTTGAAC
1630          1640          1650          1660          1670          1680

Hn540-1.Dna   1690          1700          1710          1720          1730          1740
TTGACCTGCGTCAGCATCAGCAGCAACCCCCAGTCAACTTGTCTTGGGACAAGGAAGGA
|||||
Af125521      TTGACCTGCGTCAGCATCAGCAGCAACCCCCAGTCAACTTGTCTTGGGACAAGGAAGGA
1690          1700          1710          1720          1730          1740

Hn540-1.Dna   1750          1760          1770          1780          1790          1800
GAGAGGCTGGAAGATGTGGCTGCAAACCCCCAGAGTGACCCGTTCAAAGGCTCCGCTGCA
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Af125521      GAGAGGCTGGAAGATGTGGCTGCAAACCCCCAGAGTGACCCGTTCAAAGGCTCCGCTGCA
1750          1760          1770          1780          1790          1800

Hn540-1.Dna   1810          1820          1830          1840          1850          1860
TCCAGGAGTGTTTTTCTCAGAGTGTCATCCCGAGACCACGGTCAACGGGTACCTGCCGG
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Af125521      TCCAGGAGTGTTTTTCTCAGAGTGTCATCCCGAGACCACGGTCAACGGGTACCTGCCGG
1810          1820          1830          1840          1850          1860

Hn540-1.Dna   1870          1880          1890          1900          1910          1920
GCCACAGCGAGGCACTCCGTGAAACCGTGAGCTCCTTCTACCGCTTCAATGTGCTGTAT
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Af125521      GCCACAGCGAGGCACTCCGTGAAACCGTGAGCTCCTTCTACCGCTTCAATGTGCTGTAT
1870          1880          1890          1900          1910          1920

Hn540-1.Dna   1930          1940          1950          1960          1970          1980
CCTCCAGAATTCTCTGGGGGAGCAAGTCCGGGCGAGTGACCGTGGTGGAGCAGGGCCAGGTG
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Af125521      CCTCCAGAATTCTCTGGGGGAGCAAGTCCGGGCGAGTGACCGTGGTGGAGCAGGGCCAGGTG
1930          1940          1950          1960          1970          1980

Hn540-1.Dna   1990          2000          2010          2020          2030          2040
CTGCTGCCGGTGTCTGGTGTCCGCTAACCCCGCCCCGAGGCCTTCAACTGGACCTTCCGA
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Af125521      CTGCTGCCGGTGTCTGGTGTCCGCTAACCCCGCCCCGAGGCCTTCAACTGGACCTTCCGA
1990          2000          2010          2020          2030          2040

Hn540-1.Dna   2050          2060          2070          2080          2090          2100
GGCTACCGCCTCAGCCCAGCTGGGGGTCCCCGGCACCGTATCCTGTCTGGAGGGGCTCTG
|||||
Af125521      GGCTACCGCCTCAGCCCAGCTGGGGGTCCCCGGCACCGTATCCTGTCTGGAGGGGCTCTG
2050          2060          2070          2080          2090          2100

Hn540-1.Dna   2110          2120          2130          2140          2150          2160
CAGCTGTGGAATGTGACCCGAGCTGACGATGGCTTTTATCAGCTGCACTGCCAGAACTCA
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Af125521      CAGCTGTGGAATGTGACCCGAGCTGACGATGGCTTTTATCAGCTGCACTGCCAGAACTCA
2110          2120          2130          2140          2150          2160

Hn540-1.Dna   2170          2180          2190          2200          2210          2220
GAGGGCACCGCTGAGGCGCTGTTGAAGCTGGACGTGCATTATGCTCCCACCATCCGTGCC
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Af125521      GAGGGCACCGCTGAGGCGCTGTTGAAGCTGGACGTGCATTATGCTCCCACCATCCGTGCC
2170          2180          2190          2200          2210          2220
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	2230	2240	2250	2260	2270	2280
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	2230	2240	2250	2260	2270	2280
Hn540-1.Dna	2290	2300	2310	2320	2330	2340
Af125521	GCCAATCCCATCCTCCCAGAGATGTTTCAGCTGGGAGAGACTGGGAGAAGAAGAGGAGGAT					
	2290	2300	2310	2320	2330	2340
Hn540-1.Dna	2350	2360	2370	2380	2390	2400
Af125521	CTGAACCTGGACGACATGGAGAAAGTTTCCAAGGGATCCACGGGGCGTCTGCGGATTTCGC					
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Hn540-1.Dna	2410	2420	2430	2440	2450	2460
Af125521	CAAGCCAAGCTATCCCAGGCTGGTGCCTACCAAGTGCATCGTGGACAATGGGGTGGCTCCT					
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Hn540-1.Dna	2470	2480	2490	2500	2510	2520
Af125521	GCAGCCAGAGGACTGGTTCGTCTTGTTCGTCCGATTTGCTCCCCAGGTGGATCAGCCTACT					
	2470	2480	2490	2500	2510	2520
Hn540-1.Dna	2530	2540	2550	2560	2570	2580
Af125521	CCCCTAACAAAAGTGGCTGCCGCTGGGGACAGCACCAGCTCAGCCACACTGCACTGCCGT					
	2530	2540	2550	2560	2570	2580
Hn540-1.Dna	2590	2600	2610	2620	2630	2640
Af125521	GCCCCGGGTGTCCCCAACATCGACTTCACTTGGACCAAAAACGGGGTCCCTCTGGATCTC					
	2590	2600	2610	2620	2630	2640
	2650	2660	2670	2680	2690	2700
Hn540-1.Dna	CAAGACCCCAGGTACACAGAGCACAGGTACCACCAGGGTGTGTCCACAGCAGCCTCTTG					
Af125521	CAAGACCCCAGGTACACAGAGCACAGGTACCACCAGGGTGTGTCCACAGCAGCCTCTTG					
	2650	2660	2670	2680	2690	2700
Hn540-1.Dna	2710	2720	2730	2740	2750	2760
Af125521	ACCATCGCTAATGTGTCTGCGGCCAGGACTATGCCCTCTTCAAATGCACGGCCACCAAT					
	2710	2720	2730	2740	2750	2760
Hn540-1.Dna	2770	2780	2790	2800	2810	2820
Af125521	GCCCTTGGCTCTGACCACACCAACATCCAGCTCGTCAGCATCAGCCGCCCTGACCCTCCA					
	2770	2780	2790	2800	2810	2820
Hn540-1.Dna	2830	2840	2850	2860	2870	2880
Af125521	CTGGGACTGAAGGTTGTTCAGCATAAGCCCTCACTCGGTGGGGCTGGAGTGAAGCCTGGC					
	2830	2840	2850	2860	2870	2880

	2830	2840	2850	2860	2870	2880
	2890	2900	2910	2920	2930	2940
Hn540-1.Dna	TTTGATGGGGGTCTGCCTCAGAGGTTCAAATCAGGTACGAGGCCCTCGAGACCCCAGGA					
Af125521	TTTGATGGGGGTCTGCCTCAGAGGTTCAAATCAGGTACGAGGCCCTCGAGACCCCAGGA					
	2890	2900	2910	2920	2930	2940
	2950	2960	2970	2980	2990	3000
Hn540-1.Dna	TTCCTCCACGTGGATGTCCTACCTACACAGGCCACTACCTTCACGCTGACTGGGCTGAAG					
Af125521	TTCCTCCACGTGGATGTCCTACCTACACAGGCCACTACCTTCACGCTGACTGGGCTGAAG					
	2950	2960	2970	2980	2990	3000
	3010	3020	3030	3040	3050	3060
Hn540-1.Dna	CCTTCTACACGATATAGGATCTGGCTGTTGGCCAGCAATGCCCTGGGGGACAGTGGATTG					
Af125521	CCTTCTACACGATATAGGATCTGGCTGTTGGCCAGCAATGCCCTGGGGGACAGTGGATTG					
	3010	3020	3030	3040	3050	3060
	3070	3080	3090	3100	3110	3120
Hn540-1.Dna	ACGGACAAGGGGATCCAGGTCTCCGTCACTACCCCAGGCCCGACCAGGCTCCTGAAGAC					
Af125521	ACGGACAAGGGGATCCAGGTCTCCGTCACTACCCCAGGCCCGACCAGGCTCCTGAAGAC					
	3070	3080	3090	3100	3110	3120
	3130	3140	3150	3160	3170	3180
Hn540-1.Dna	ACAGACCACCAGCTGCCCACAGAGCTGCCTCCAGGACCCCCAAGGCTGCCCCTGCTGCCT					
Af125521	ACAGACCACCAGCTGCCCACAGAGCTGCCTCCAGGACCCCCAAGGCTGCCCCTGCTGCCT					
	3130	3140	3150	3160	3170	3180
	3190	3200	3210	3220	3230	3240
Hn540-1.Dna	GTGCTCTTTGCAGTTGGTGGTCTTCTGCTGCTCTCCAATGCCTCCTGTGTTGGGGGTCTC					
Af125521	GTGCTCTTTGCAGTTGGTGGTCTTCTGCTGCTCTCCAATGCCTCCTGTGTTGGGGGTCTC					
	3190	3200	3210	3220	3230	3240
	3250	3260	3270	3280	3290	3300
Hn540-1.Dna	CTCTGGCGGAGAAGACTGAGGCGCCTTGCTGAGGAGATCTCAGAGAAGACAGAGGCAGGG					
Af125521	CTCTGGCGGAGAAGACTGAGGCGCCTTGCTGAGGAGATCTCAGAGAAGACAGAGGCAGGG					
	3250	3260	3270	3280	3290	3300
	3310	3320	3330	3340	3350	3360
Hn540-1.Dna	TCGGAGGACAGGATCAGGAATGAATATGAGGAGAGTCAGTGGACTGGGGACCGGGACACG					
Af125521	TCGGAGGACAGGATCAGGAATGAATATGAGGAGAGTCAGTGGACTGGGGACCGGGACACG					
	3310	3320	3330	3340	3350	3360
	3370	3380	3390	3400	3410	3420
Hn540-1.Dna	AGAAGCTCCACGGTTAGCACAGCAGAAGTGGACCCAAATTACTACTCCATGAGGGACTTC					
Af125521	AGAAGCTCCACGGTTAGCACAGCAGAAGTGGACCCAAATTACTACTCCATGAGGGACTTC					
	3370	3380	3390	3400	3410	3420
	3430	3440	3450	3460	3470	3480
Hn540-1.Dna	AGCCCCAGCTTCCCCCAACACTGGAGGAGGTGCTGTATCACCAAGGTGCTGAAGGCGAG					
Af125521	AGCCCCAGCTTCCCCCAACACTGGAGGAGGTGCTGTATCACCAAGGTGCTGAAGGCGAG					
	3430	3440	3450	3460	3470	3480
	3490	3500	3510	3520	3530	3540
Hn540-1.Dna	GACATGGCCTTCCCCGGACACCTGCATGATGAAGTGGAGAGAGCCTATGGCCCCGCTGGG					


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Af125521      GACATGGCCTTCCCCGGACACCTGCATGATGAAGTGGAGAGAGCCTATGGCCCGCCTGGG
                3490      3500      3510      3520      3530      3540
                3550      3560      3570      3580      3590      3600
Hn540-1.Dna   GCCTGGGGACCCCTCTATGATGAAGTACGAATGGACCCCTATGACCTTCGCTGGCCTGAG
                |||||
Af125521      GCCTGGGGACCCCTCTATGATGAAGTACGAATGGACCCCTATGACCTTCGCTGGCCTGAG
                3550      3560      3570      3580      3590      3600
                3610      3620      3630      3640      3650      3660
Hn540-1.Dna   GTCCAATGTGAGGATCCGAGGGGAATCTACAACCAGGTGGCAGCAGACATGGATGCTGTG
                |||||
Af125521      GTCCAATGTGAGGATCCGAGGGGAATCTACAACCAGGTGGCAGCAGACATGGATGCTGTG
                3610      3620      3630      3640      3650      3660
                3670      3680      3690      3700
Hn540-1.Dna   GAAGCTAGCTCTCTGCCGTTTGAGCTGAGGGGACATCTGGTGTGA
                |||||
Af125521      GAAGCTAGCTCTCTGCCGTTTGAGCTGAGGGGACATCTGGTGTGA
                3670      3680      3690      3700

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Hn540-1.Dna
Emrod:Af161715

ID AF161715 standard; RNA; ROD; 5820 BP.
AC AF161715;
SV AF161715.1
DT 12-DEC-1999 (Rel. 62, Created)

DT 12-DEC-1999 (Rel. 62, Last updated, Version 1)
DE Rattus norvegicus nephrin mRNA, complete cds.
KW .
OS Rattus norvegicus (Norway rat)
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia;

OC Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.

RN [1]:
RP 1-5820
RA Kawachi H., Koike H., Yaoita E., Yamamoto T., Oriaka M., Shimizu F.;
RT "Cloning of rat nephrin and its expression and localization in proteinuric
RT states";
RL Unpublished.
RN [2]
RP 1-5820
RA Kawachi H., Koike H., Yaoita E., Yamamoto T., Oriaka M., Shimizu F.;
RT ;
RL Submitted (22-JUN-1999) to the EMBL/GenBank/DBJ databases.

RL Department of Cell Biology, Institute of Nephrology, Niigata University
RL School of Medicine, 1-757 Asahimachi-dori, Niigata 951-8510, Japan
DR SPTREMBL; Q9QXX7; Q9QXX7.

FH Key Location/Qualifiers

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FT source 1. 5820
FT /db_xref="taxon:10116"
FT /organism="Rattus norvegicus"
FT /strain="Wistar"
FT /tissue_type="glomeruli"
FT CDS 404. 4162
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FT /db_xref="SPTREMBL:Q9QXX7"
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SCORES Init1: 18452 Initn: 18452 Opt: 18453 z-score: 25893.3 E(): 0
99.8% identity in 3705 bp overlap

Page -12-

	730	740	750	760	770	780
	340	350	360	370	380	390
Hn540-1.Dna	CGCTCAGAGTTGGGTCCCGAGCTTGTGTCTCCTAAAGTAATCCTCTCCATTCTAGTTTCC					
Af161715	CGCTCAGAGTTGGGTCCCGAGCTTGTGTCTCCTAAAGTAATCCTCTCCATTCTAGTTTCC					
	790	800	810	820	830	840
	400	410	420	430	440	450
Hn540-1.Dna	CCCAAGGTGCTTCTGTTGACCCCCGAGGCAGGAAGCACAGTGACCTGGGTAGCTGGGCAG					
Af161715	CCCAAGGTGCTTCTGTTGACCCCCGAGGCAGGAAGCACAGTGACCTGGGTAGCTGGGCAG					
	850	860	870	880	890	900
	460	470	480	490	500	510
Hn540-1.Dna	GAGTATGTGGTCACCTGTGTGTCTGGGGATGCAAAACCAGCACCTGACATCACCTTCATC					
Af161715	GAGTATGTGGTCACCTGTGTGTCTGGAGATGCAAAACCAGCACCTGACATCACCTTCATC					
	910	920	930	940	950	960
	520	530	540	550	560	570
Hn540-1.Dna	CAGAGTGGACGAACTATATTGGACGTCTCCTCCAATGTGAATGAGGGATCAGAGGAGAAA					
Af161715	CAGAGTGGACGAACTATATTGGACGTCTCCTCCAATGTGAATGAGGGATCAGAGGAGAAA					
	970	980	990	1000	1010	1020
	580	590	600	610	620	630
Hn540-1.Dna	CTCTGCATCACAGAGGCCGAAGCCAGGGTGATACCCAGAGCTCGGATAACGGGCAGTTA					
Af161715	CTCTGCATCACAGAGGCCGAAGCCAGGGTGATACCCAGAGCTCGGATAACGGGCAGTTA					
	1030	1040	1050	1060	1070	1080
	640	650	660	670	680	690
Hn540-1.Dna	CTGGTCTGTGAGGGTTCCAACCCAGCTTTGGACACTCCCATAAAGGCTTCATTACCATG					
Af161715	CTGGTCTGTGAGGGTTCCAACCCAGCTTTGGACACTCCCATAAAGGCTTCATTACCATG					
	1090	1100	1110	1120	1130	1140
	700	710	720	730	740	750
Hn540-1.Dna	AATATTCTGTTTCCCCCAGGACCTCCTGTCATTGATTGGCCAGGCCTGAATGAAGGGCAT					
Af161715	AATATTCTGTTTCCCCCAGGACCTCCTGTCATTGATTGGCCAGGCCTGAATGAAGGGCAT					
	1150	1160	1170	1180	1190	1200
	760	770	780	790	800	810
Hn540-1.Dna	GTGAGGGCAGGGGAGAACCTGGAGCTGCCCTGCACAGCCAGAGGTGGCAATCCACCTGCT					
Af161715	GTGAGGGCAGGGGAGAACCTGGAGCTGCCCTGCACAGCCAGAGGTGGCAATCCACCTGCT					
	1210	1220	1230	1240	1250	1260
	820	830	840	850	860	870
Hn540-1.Dna	ACCCTGCAGTGGCTGAAGAACGGTAAACCAGTGTCCACAGCCTGGGGCACCAGCATGCC					
Af161715	ACCCTGCAGTGGCTGAAGAACGGTAAACCAGTGTCCACAGCCTGGGGCACCAGCATGCC					
	1270	1280	1290	1300	1310	1320
	880	890	900	910	920	930
Hn540-1.Dna	CAGGCAGTGGCCACAGTGTGCTGGTGATGACTGTACGACCTGAAGACCATGGAGCTCGG					
Af161715	CAGGCAGTGGCCACAGCGTGTGCTGGTGATGACTGTACGACCTGAAGACCATGGAGCTCGG					
	1330	1340	1350	1360	1370	1380
	940	950	960	970	980	990
Hn540-1.Dna	CTCAGCTGTCAGTCCTACAACAGCGTGTCTGCAGGGACCCAGGAGAGAAGCATCACACTA					

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|||||
Af161715      CTCAGCTGTCAGTCTTACAACAGCGTGTCTGCAGGGACCCAGGAGAGAAGCATCACACTA
1390          1400          1410          1420          1430          1440

          1000          1010          1020          1030          1040          1050
Hn540-1.Dna   CAGGTCACCTTTCCCCCAAGCGCCATTACCATCCTGGGATCTGTATCACAATCGGAGAAC
|||||
Af161715      CAGGTCACCTTTCCCCCAAGCGCCATTACCATCCTGGGATCTGTATCACAATCGGAGAAC
1450          1460          1470          1480          1490          1500

          1060          1070          1080          1090          1100          1110
Hn540-1.Dna   AAGAACGTGACCCTTTGCTGCCTGACCAAGTCCAGTCGCCCACGGGTCCTGCTGCGATGG
|||||
Af161715      AAGAACGTGACCCTTTGCTGCCTGACCAAGTCCAGTCGCCCACGGGTCCTGCTGCGATGG
1510          1520          1530          1540          1550          1560

          1120          1130          1140          1150          1160          1170
Hn540-1.Dna   TGGTTGGGTGGACGGCAGCTGCTGCCCACAGATGAGACAGTCATGGATGGCCTGCATGGT
|||||
Af161715      TGGTTGGGTGGACGGCAGCTGCTGCCCACAGATGAGACAGTCATGGATGGCCTGCATGGT
1570          1580          1590          1600          1610          1620

          1180          1190          1200          1210          1220          1230
Hn540-1.Dna   GGCCACATCTCCATGTCCAATCTCACATTCTTGGTGCGGAGAGAAGACAATGGCCTGCCC
|||||
Af161715      GGCCACATCTCCATGTCCAATCTCACATTCTTGGTGCGGAGAGAAGACAATGGCCTGCCC
1630          1640          1650          1660          1670          1680

          1240          1250          1260          1270          1280          1290
Hn540-1.Dna   CTCACGTGTGAAGCCTTCAGTGACGCCTTCAGCAAGGAGACCTTCAAGAAGTCACTCACC
|||||
Af161715      CTCACCTGTGAAGCCTTCAGTGACGCCTTCAGCAAGGAGACCTTCAAGAAGTCACTCACC
1690          1700          1710          1720          1730          1740

          1300          1310          1320          1330          1340          1350
Hn540-1.Dna   TTGAATGTGAAATACCCTGCCCAGAAGCTGTGGATTGAGGGGCCCCCAGAGGGACAGTAC
|||||
Af161715      TTGAATGTGAAATACCCTGCCCAGAAGCTGTGGATTGAGGGGCCCCCAGAGGGACAGTAC
1750          1760          1770          1780          1790          1800

          1360          1370          1380          1390          1400          1410
Hn540-1.Dna   ATCCGGACTGGGACTCGGGTGAGGCTGGTATGCTTGGCCATCGGAGGCAACCCAGACCCC
|||||
Af161715      ATCCGGACTGGGACTCGGGTGAGGCTGGTATGCTTGGCCATCGGAGGCAACCCAGACCCC
1810          1820          1830          1840          1850          1860

          1420          1430          1440          1450          1460          1470
Hn540-1.Dna   TCCCTCATCTGGTTTAAAGATTACGTCGGGTGAGCGAGCCCCGGCAGCCCCAGGAGCCC
|||||
Af161715      TCCCTCATCTGGTTTAAAGATTACGTCGGGTGAGCGAGCCCCGGCAGCCCCAGGAGCCC
1870          1880          1890          1900          1910          1920

          1480          1490          1500          1510          1520          1530
Hn540-1.Dna   CGGCGTGTGCAGCTGGGCAGTGTGGAGAAGTCCGGGAGCACTTTCTCCCGCAGCTGGTG
|||||
Af161715      CGGCGTGTGCAGCTGGGCAGTGTGGAGAAGTCCGGGAGCACTTTCTCCCGCAGCTGGTG
1930          1940          1950          1960          1970          1980

          1540          1550          1560          1570          1580          1590
Hn540-1.Dna   TTGATCATAGGTCCGCCGGACAACCGAGCCAAGTTCTCCTGCAAGGCGGGTCAGCTCAGT
|||||
Af161715      TTGATCATAGGTCCGCCGGACAACCGAGCCAAGTTCTCCTGCAAGGCGGGTCAGCTCAGT
1990          2000          2010          2020          2030          2040
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1600 1610 1620 1630 1640 1650

Hn540-1.Dna GCGTCTACGCAGCTGGTGGTGCAGTTCCCCCAACCAACCTGACCATCCTGGCCAACTCG
|||||
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2050 2060 2070 2080 2090 2100

1660 1670 1680 1690 1700 1710

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|||||
Af161715 TCCGCGCTGCGCCCAGGCGACGCCTTGAACCTGACCTGCGTCAGCATCAGCAGCAACCCC
2110 2120 2130 2140 2150 2160

1720 1730 1740 1750 1760 1770

Hn540-1.Dna CCAGTCAACTTGTCTTGGGACAAGGAAGGAGAGAGGCTGGAAGATGTGGCTGCAAACCC
|||||
Af161715 CCAGTCAACTTGTCTTGGGACAAGGAAGGAGAGAGGCTGGAAGATGTGGCTGCAAACCC
2170 2180 2190 2200 2210 2220

1780 1790 1800 1810 1820 1830

Hn540-1.Dna CAGAGTGCACCGTTCAAAGGCTCCGCTGCATCCAGGAGTGTTCCTCTCAGAGTGTTCATCC
|||||
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2230 2240 2250 2260 2270 2280

1840 1850 1860 1870 1880 1890

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|||||
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2290 2300 2310 2320 2330 2340

1900 1910 1920 1930 1940 1950

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|||||
Af161715 AGCTCCTTCTACCGCTTCAATGTGCTGTATCCTCCAGAATTCCTGGGGGAGCAAGTCCGG
2350 2360 2370 2380 2390 2400

1960 1970 1980 1990 2000 2010

Hn540-1.Dna GCAGTGACCGTGGTGGAGCAGGGCCAGGTGCTGCTGCCGGTGTCCGGTGTCCGCTAACCCC
|||||
Af161715 GCAGTGACCGTGGTGGAGCAGGGCCAGGTGCTGCTGCCGGTGTCCGGTGTCCGCTAACCCC
2410 2420 2430 2440 2450 2460

2020 2030 2040 2050 2060 2070

Hn540-1.Dna GCGCCCGAGGCCTTCAACTGGACCTTCCGAGGCTACCGCCTCAGCCAGCTGGGGGTCCC
|||||
Af161715 GCGCCCGAGGCCTTCAACTGGACCTTCCGAGGCTACCGCCTCAGCCAGCTGGGGGTCCC
2470 2480 2490 2500 2510 2520

2080 2090 2100 2110 2120 2130

Hn540-1.Dna CGGCACCGTATCCTGTCTGGAGGGGCTCTGCAGCTGTGGAATGTGACCCGAGCTGACGAT
|||||
Af161715 CGGCACCGTATCCTGTCTGGAGGGGCTCTGCAGCTGTGGAATGTGACCCGAGCTGACGAT
2530 2540 2550 2560 2570 2580

2140 2150 2160 2170 2180 2190

Hn540-1.Dna GGCTTTTATCAGCTGCACTGCCAGAACTCAGAGGGCACCGCTGAGGCGCTGTTGAAGCTG
|||||
Af161715 GGCTTTTATCAGCTGCACTGCCAGAACTCAGAGGGCACCGCTGAGGCGCTGTTGAAGCTG
2590 2600 2610 2620 2630 2640

2200 2210 2220 2230 2240 2250

Hn540-1.Dna GACGTGCATTATGCTCCACCATCCGTGCCCTCCGGGACCCTACTGAGGTGAATGTTGGG
|||||

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Af161715      GACCCATTATGCTCCCACCATCCGTGCCCTCCGGCCCTACTGAGGTGAATGTTGGG
2650          2660          2670          2680          2690          2700

Hn540-1.Dna   2260          2270          2280          2290          2300          2310
GGTTCTGTGGACATAGTCTGCACCGTTGACGCCAATCCCATCCTCCCAGAGATGTTTCAGC
|||||
Af161715      GGTTCTGTGGACATAGTCTGCACCGTTGACGCCAATCCCATCCTCCCAGAGATGTTTCAGC
2710          2720          2730          2740          2750          2760

Hn540-1.Dna   2320          2330          2340          2350          2360          2370
TGGGAGAGACTGGGAGAAGAAGAGGAGGATCTGAACCTGGACGACATGGAGAAAGTTTCC
|||||
Af161715      TGGGAGAGACTGGGAGAAGAAGAGGAGGATCTGAACCTGGACGACATGGAGAAAGTTTCC
2770          2780          2790          2800          2810          2820

Hn540-1.Dna   2380          2390          2400          2410          2420          2430
AAGGGATCCACGGGGCGTCTGCGGATTCGCCAAGCCAAGCTATCCCAGGCTGGTGCCTAC
|||||
Af161715      AAGGGATCCACGGGGCGTCTGCGGATTCGCCAAGCCAAGCTATCCCAGGCTGGTGCCTAC
2830          2840          2850          2860          2870          2880

Hn540-1.Dna   2440          2450          2460          2470          2480          2490
CAGTGCATCGTGGACAATGGGGTGGCTCCTGCAGCCAGAGGACTGGTTTCGTCTTGTCGTC
|||||
Af161715      CAGTGCATCGTGGACAATGGGGTGGCTCCTGCAGCCAGAGGACTGGTTTCGTCTTGTCGTC
2890          2900          2910          2920          2930          2940

Hn540-1.Dna   2500          2510          2520          2530          2540          2550
CGATTTGCTCCCCAGGTGGATCAGCCTACTCCCCTAACAAAAGTGGCTGCCGCTGGGGAC
|||||
Af161715      CGATTTGCTCCCCAGGTGGATCAGCCTACTCCCCTAACAAAAGTGGCTGCCGCTGGGGAC
2950          2960          2970          2980          2990          3000

Hn540-1.Dna   2560          2570          2580          2590          2600          2610
AGCACCAGCTCAGCCACACTGCACTGCCGTGCCCGGGGTGTCCCCAACATCGACTTCACT
|||||
Af161715      AGCACCAGCTCAGCCACACTGCACTGCCGTGCCCGGGGTGTCCCCAACATCGACTTCACT
3010          3020          3030          3040          3050          3060

Hn540-1.Dna   2620          2630          2640          2650          2660          2670
TGGACCAAAAACGGGGTCCCTCTGGATCTCCAAGACCCAGGTACACAGAGCACAGGTAC
|||||
Af161715      TGGACCAAAAACGGGGTCCCTCTGGATCTCCAAGACCCAGGTACACAGAGCACAGGTAC
3070          3080          3090          3100          3110          3120

Hn540-1.Dna   2680          2690          2700          2710          2720          2730
CACCAGGGTGTGTGCCACAGCAGCCTCTTGACCATCGCTAATGTGTCTGCGGCCAGGAC
|||||
Af161715      CACCAGGGTGTGTGCCACAGCAGCCTCTTGACCATCGCTAATGTGTCTGCGGCCAGGAC
3130          3140          3150          3160          3170          3180

Hn540-1.Dna   2740          2750          2760          2770          2780          2790
TATGCCCTCTTCAAATGCACGGCCACCAATGCCCTTGGCTCTGACCACACCAACATCCAG
|||||
Af161715      TATGCCCTCTTCAAATGCACGGCCACCAATGCCCTTGGCTCTGACCACACCAACATCCAG
3190          3200          3210          3220          3230          3240

Hn540-1.Dna   2800          2810          2820          2830          2840          2850
CTCGTCAGCATCAGCCGCCCTGACCCTCCACTGGGACTGAAGGTTGTCAGCATAAGCCCT
|||||
Af161715      CTCGTCAGCATCAGCCGCCCTGACCCTCCACTGGGACTGAAGGTTGTCAGCATAAGCCCT
3250          3260          3270          3280          3290          3300
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860 2870 2880 2900 2910

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3310 3320 3330 3340 3350 3360

2920 2930 2940 2950 2960 2970

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3370 3380 3390 3400 3410 3420

2980 2990 3000 3010 3020 3030

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3430 3440 3450 3460 3470 3480

3040 3050 3060 3070 3080 3090

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3490 3500 3510 3520 3530 3540

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Af161715 CCAGGACCCCCAAGGCTGCCCCTGCTGCCTGTGCTCTTTGCAGTTGGTGGTCTTCTGCTG

3610 3620 3630 3640 3650 3660

3220 3230 3240 3250 3260 3270

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Af161715 CTCTCCAATGCCTCCTGTGTTGGGGGTCTCCTCTGGCGGAGAAGACTGAGGCGCCTTGCT

3670 3680 3690 3700 3710 3720

3280 3290 3300 3310 3320 3330

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Af161715 GAGGAGATCTCAGAGAAGACAGAGGCAGGGTCGGAGGACAGGATCAGGAATGAATATGAG

3730 3740 3750 3760 3770 3780

3340 3350 3360 3370 3380 3390

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Af161715 GAGAGTCAGTGGACTGGGGACCGGGACACGAGAAGCTCCACGGTTAGCACAGCAGAAGTG

3790 3800 3810 3820 3830 3840

3400 3410 3420 3430 3440 3450

Hn540-1.Dna GACCCAAATTACTACTCCATGAGGGACTTCAGCCCCAGCTTCCCCAACACTGGAGGAG
|||||

Af161715 GACCCAAATTACTACTCCATGAGGGACTTCAGCCCCAGCTTCCCCAACACTGGAGGAG

3850 3860 3870 3880 3890 3900

3460 3470 3480 3490 3500 3510

Hn540-1.Dna GTGCTGTATCACCAAGGTGCTGAAGGCGAGGACATGGCCTTCCCCGGACACCTGCATGAT
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      Af161715      GTGCTATCACCAAGGTGCTGAAGGCGAGGACATGCTTCCCCGGACACCTGCATGAT
      3910          3920          3930          3940          3950          3960

      3520          3530          3540          3550          3560          3570
Hn540-1.Dna GAAGTGGAGAGAGCCTATGGCCCCGCTGGGGCCTGGGGACCCCTCTATGATGAAGTACGA
      ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Af161715      GAAGTGGAGAGAGCCTATGGCCCCGCTGGGGCCTGGGGACCCCTCTATGATGAAGTACGA
      3970          3980          3990          4000          4010          4020

      3580          3590          3600          3610          3620          3630
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      ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Af161715      ATGGACCCCTATGACCTTCGCTGGCCTGAGGTCCAATGTGAGGATCCGAGGGGAATCTAC
      4030          4040          4050          4060          4070          4080

      3640          3650          3660          3670          3680          3690
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      ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Af161715      GACCAGGTGGCAGCAGACATGGATGCTGTGGAAGCTAGCTCTCTGCCGTTTGAGCTGAGG
      4090          4100          4110          4120          4130          4140

      3700
Hn540-1.Dna GGACATCTGGTGTGA
      ||||||||||||||
Af161715      GGACATCTGGTGTGAGACGCTTCACAACACCCGTTTCTACAGCCCTGGAGAAGATGTGA
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Hn540-1.Dna
Emrod:Af168466

ID AF168466 standard; RNA; ROD; 3729 BP.

AC AF168466;
SV AF168466.1
DT 21-OCT-1999 (Rel. 61, Created)
DT 21-OCT-1999 (Rel. 61, Last updated, Version 1)
DE Mus musculus nephrin (Nphs1) mRNA, complete cds.
KW .
OS Mus musculus (house mouse)
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia;

OC Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
RN [1]
RP 1-3729
RX MEDLINE; 99436348.
RA Holzman L.B., St John P.L., Kovari I.A., Verma R., Holthofer H.,
RA Abrahamson D.R.;
RT "Nephrin localizes to the slit pore of the glomerular epithelial cell";
RL Kidney Int. 56(4):1481-1491(1999).
RN [2]
RP 1-3729

RA Holzman L.B., St John P.L., Kovari I.A., Verma R., Holthofer H.,
RA Abrahamson D.R.;
RT ;
RL Submitted (12-JUL-1999) to the EMBL/GenBank/DDBJ databases.
RL Internal Medicine/Nephrology, University of Michigan Medical School, 1560
RL MSRB II, P.O. Box 0676, Ann Arbor, MI 48109-0676, USA
DR SPTREMBL; Q9QZS7; Q9QZS7.
FH Key Location/Qualifiers
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SCORES Init1: 14308 Initn: 15239 Opt: 14974 z-score: 21379.6 E(): 0
92.6% identity in 3458 bp overlap

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Af168466          | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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                  10      20      30      40      50      60

Hn540-1.Dna      50      60      70      80      90      100
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                  | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Af168466          CTGGCCGAGTCGCCAGTCCCCACCTCAGCACCTCGAGGCTTCTGGGCTCTATCTGAAAAC
                  70      80      90      100      110      120

                  110      120      130      140      150      160

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Af168466          CTGACTGTGGTGGAAGGGTCGACAATTAAGCTGTGGTGTCAGGGCCCCCGGCAGT
                  130      140      150      160      170      180

Hn540-1.Dna      170      180      190      200      210      220
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                  | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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                  | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Af168466          CCAAGGTACAGCCTGGAAGGAGACAGTGCTAAAGGTGAGTTCCACCTGCTTATTGAAGCC
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|||||

Af168466 TGTGACCTCAGCGATGATGCGGAGTACGAGTGCCAAGTCGGCCGCTCCGAGTTGGGTCCC

310 320 330 340 350 360

Hn540-1.Dna 350 360 370 380 390 400

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|||||

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370 380 390 400 410 420

Hn540-1.Dna 410 420 430 440 450 460

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|||||

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Hn540-1.Dna 470 480 490 500 510 520

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|||||

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490 500 510 520 530 540

Hn540-1.Dna 530 540 550 560 570 580

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|||||

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550 560 570 580 590 600

Hn540-1.Dna 590 600 610 620 630 640

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Hn540-1.Dna 650 660 670 680 690 700

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Af168466 AACCCAGCCTTGGCCACTCCCATAAAGGCTTCGTTACCATGAATATCCTGTTCCCCCCA

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Hn540-1.Dna 710 720 730 740 750 760

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Af168466 GGACCCCTGTGATTGATTGGCCAGGCCTGAATGAGGGCATGTACGGGCAGGGGAGAAC

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Hn540-1.Dna 770 780 790 800 810 820

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|||||

Af168466 CTGGAGCTACCCTGCATAGCCAGAGGTGGAATCCACCTGCGACCCTGCAGTGGCTGAAG

790 800 810 820 830 840

Hn540-1.Dna 830 840 850 860 870 880

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|||||

Af168466 AATGGTAAACCAGTGTCCATAGCTTGGGGCACAGAGCATGCCAGGCAGTGGCTCACAGT

850 860 870 880 890 900

Hn540-1.Dna 890 900 910 920 930 940

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|||||

Af168466 GTGCTGGTGATGACCGTTCGACCTGAAGACCACGGAGCTCGGCTCAGCTGTCAGTCCTAC

910 920 930 940 950 960

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          1010      1020      1030      1040      1050      1060
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|| ||| ||||||| ||||||| ||||||| ||||||| ||||||| |||||||
Af168466    AGTGCCGTTACCATCCTGGGATCTACATCACAGTCTGAGAACAATAATGTGACCCTTTGC
          1030      1040      1050      1060      1070      1080

          1070      1080      1090      1100      1110      1120
Hn540-1.Dna TGCCTGACCAAGTCCAGTCGCCCACGGGTCTGCTGCGATGGTGGTTGGGTGGACGGCAG
||||| ||||||| ||||||| ||||||| ||||||| |||||||
Af168466    TGCCTTACCAAGTCCAGTCGCCCACGGGTCTGCTGCGATGGTGGTTGGGTGGACGGCAG
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          1130      1140      1150      1160      1170      1180
Hn540-1.Dna CTGCTGCCCACAGATGAGACAGTCATGGATGGCCTGCATGGTGGCCACATCTCCATGTCC
||||| ||||||| ||||||| ||||||| ||||||| |||||||
Af168466    TTGCTGCCCACGGATGAGACAGTCATGGATGGCCTGCATGGTGGCCACATCTCCATGTCC
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          1190      1200      1210      1220      1230      1240
Hn540-1.Dna AATCTCACATTCTTGGTGCAGAGAGAAGACAATGGCCTGCCCTCACGTGTGAAGCCTTC
||||| ||| ||||||| ||||||| ||||||| ||||||| |||||||
Af168466    AATCTGACACTCTTGGTGAAGAGAGAAGACAATGGCCTGTCCCTCACCTGCGAAGCCTTC
          1210      1220      1230      1240      1250      1260

          1250      1260      1270      1280      1290      1300
Hn540-1.Dna AGTGACGCCTTCAGCAAGGAGACCTTCAAGAAGTCACTCACCTTGAATGTGAAATACCCT
||||| ||||||| ||||||| ||||||| ||||||| |||||||
Af168466    AGTGATGCCTTCAGCAAGGAGACCTTCAAGAAGTCACTCACCTTGAATGTAAAATACCCG
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          1310      1320      1330      1340      1350      1360
Hn540-1.Dna GCCCAGAAGCTGTGGATTGAGGGGCCCCCAGAGGGACAGTACATCCGGACTGGGACTCGG
||||| ||||||| ||||||| ||||||| ||||||| |||||||
Af168466    GCCCAGAAGCTGTGGATTGAGGGACCCCCAGAGGGGCAGAGCATCCGGACTGGAATCGG
          1330      1340      1350      1360      1370      1380

          1370      1380      1390      1400      1410      1420
Hn540-1.Dna GTGAGGCTGGTATGCTTGGCCATCGGAGGCAACCCAGACCCCTCCCTCATCTGGTTAAG
||||| ||||||| ||||||| ||||||| ||||||| |||||||
Af168466    GTGAGGCTGGTATGCTTGGCCATTGGAGGCAACCCAGAGCCCTCCCTCACCTGGCTTAAG
          1390      1400      1410      1420      1430      1440

          1430      1440      1450      1460      1470      1480
Hn540-1.Dna GATTCACGTCCGGTGAGCGAGCCCCGGCAGCCCCAGGAGCCCCGGCGTGTGCAGCTGGGC
||||| ||||||| ||||||| ||||||| ||||||| |||||||
Af168466    GATTCGCGCCCGGTGAACGATCCTCGGCAGTCTCAGGAGCCCCGGCGTGTGCAGCTGGGC
          1450      1460      1470      1480      1490      1500

          1490      1500      1510      1520      1530      1540
Hn540-1.Dna AGTGTGGAGAAGTCCGGGAGCACTTTCTCCCGGAGCTGGTGCTGATCATAGGTCGGCCG
||||| ||||||| ||||||| ||||||| ||||||| |||||||
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          1510      1520      1530      1540      1550      1560

          1550      1560      1570      1580      1590      1600
Hn540-1.Dna GACAACCGAGCCAAGTTCTCCTGCAAGGCGGGTCAGCTCAGTGCGTCTACGCAGCTGGTG
||||| ||||||| ||||||| ||||||| ||||||| |||||||
```

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1610 1620 1630 1640 1650 1660
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1670 1680 1690 1700 1710 1720
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1730 1740 1750 1760 1770 1780
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1750 1760 1770 1780 1790 1800

1790 1800 1810 1820 1830 1840
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|||||
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1810 1820 1830 1840 1850 1860

1850 1860 1870 1880 1890 1900
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1870 1880 1890 1900 1910 1920

1910 1920 1930 1940 1950 1960
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|||||
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1930 1940 1950 1960 1970 1980

1970 1980 1990 2000 2010 2020
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Af168466 CAGGGCCAGGCACTGCTGCCTGTGTCCGTGTCTGTAACCCCGCCCCGAGGCCTTCAAC
1990 2000 2010 2020 2030 2040

2030 2040 2050 2060 2070 2080
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|||||
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2050 2060 2070 2080 2090 2100

2090 2100 2110 2120 2130 2140
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2110 2120 2130 2140 2150 2160

2150 2160 2170 2180 2190 2200
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|||||
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2170 2180 2190 2200 2210 2220

```

                2210      2220      2230      2240      2250      2260
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|||||
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                2230      2240      2250      2260      2270      2280

                2270      2280      2290      2300      2310      2320
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|||||
Af168466     TGCACCGTCGATGCCAATCCCATCCTCCCAGAGATGTTTCAGTTGGGAGAGGCTGGGGGAA
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                2330      2340      2350      2360      2370      2380
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|||
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                2390      2400      2410      2420      2430      2440
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|||||
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                2450      2460      2470      2480      2490      2500
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|||||
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                2510      2520      2530      2540      2550      2560
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|||||
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                2530      2540      2550      2560      2570      2580

                2570      2580      2590      2600      2610      2620
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|||
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                2590      2600      2610      2620      2630      2640

                2630      2640      2650      2660      2670      2680
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|||||
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                2650      2660      2670      2680      2690      2700

                2690      2700      2710      2720      2730      2740
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|||||
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                2710      2720      2730      2740      2750      2760

                2750      2760      2770      2780      2790      2800
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|||
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                2770      2780      2790      2800      2810      2820

                2810      2820      2830      2840      2850      2860
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|||||
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2870 2880 2890 2900 2910 2920
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3010 3020 3030 3040 3050 3060

3050 3060 3070 3080 3090 3100
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||||| ||||||| ||||||| ||||||| ||||||| |||||||
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3070 3080 3090 3100 3110 3120

3110 3120 3130 3140 3150 3160
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3170 3180 3190 3200 3210 3220
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3230 3240 3250 3260 3270 3280
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3250 3260 3270 3280 3290 3300

3290 3300 3310 3320 3330 3340
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||||| ||||||| ||||||| ||||||| ||||||| |||||||
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||||| ||||||| ||||||| ||||||| ||||||| |||||||
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3370 3380 3390 3400 3410 3420

3410 3420 3430 3440 3450 3460
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3430 3440 3450 3460 3470 3480

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Hn540-1.Dna
Emhum1:Af035835

ID AF035835 standard; RNA; HUM; 4285 BP.
AC AF035835;
SV AF035835.1
DT 08-APR-1998 (Rel. 55, Created)
DT 03-MAR-2000 (Rel. 62, Last updated, Version 3)
DE Homo sapiens nephrin (NPHS1) mRNA, complete cds.
KW .

OS Homo sapiens (human)
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia;
OC Eutheria; Primates; Catarrhini; Hominidae; Homo.
RN [1]
RP 1-4285
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RA Kestila M., Lenkkeri U., Mannikko M., Lamerdin J., McCready P., Putaala H.,

RA Ruotsalainen V., Morita T., Nissinen M., Herva R., Kashtan C.E.,
RA Peltonen L., Holmberg C., Olsen A., Tryggvason K.;
RT "Positionally cloned gene for a novel glomerular protein--nephrin--is
RT mutated in congenital nephrotic syndrome";
RL Mol. Cell 1(4):575-582(1998).
RN [2]
RP 1-4285
RA Lenkkeri U., Kestila M., Mannikko M., Lamerdin J., McCready p., Putaala H.,

RA Ruotsalainen V., Morita T., Nissinen M., Herva R., Kashtan C.E.,
RA Peltonen L., Holmberg C., Olsen A., Tryggvason K.;
RT ;
RL Submitted (26-NOV-1997) to the EMBL/GenBank/DDBJ databases.
RL Biochemistry, University of Oulu, Linnanmaa, Oulu 90570, Finland
DR SPTREMBL; O60500; O60500.

FH Key Location/Qualifiers

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SNLTFLARREDNGLTLTCEAFSEAFTEKSLILNVKYPAQKLWIEGPPEGQKLRF

FT

TRVRLVCLAIGGNPEPSLMWYKDSRTVTESRLPQESRRVHLGSVEKSGSTFSRELVLVT

SCORES Init1: 11557 Initn: 12214 Opt: 12066 z-score: 17125.7 E(): 0
83.1% identity in 3474 bp overlap

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                                10      20      30      40
Hn540-1.Dna      ATGTCCAGTTTGA TCTCCCTGCTGCTCATGGGAATGCTGACCTCAGGC
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Af035835      ATGGCCCTGGGGACGACGCTCAGGGCTTCTCTCCTGCTCCTGGGGCTGCTGACTGAAGGC
                   10      20      30      40      50      60

                                50      60      70      80      90      100
Hn540-1.Dna      CTGGCCGAGTCGCCAGTCCCCACCTCAGCACCTCGAGGCTTCTGGGCTCTGTCTGAAAAC
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Af035835      CTGGCGCAGTTGGCGATTCTGCCTCCGTTCCCCGGGGCTTCTGGGCCCTGCCTGAAAAC
                   70      80      90      100      110      120

                                110      120      130      140      150      160
Hn540-1.Dna      CTGACTGCGGTGGAAGGGACAACAGTTAAGCTATGGTGCGGTGTCAGGGCCCCCTGGCAGT
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Af035835      CTGACGGTGGTGGAGGGGGCCTCAGTGGAGCTGCGTTGTGGGGTCAGCACCCCTGGCAGT
                   130      140      150      160      170      180

                                170      180      190      200      210      220
Hn540-1.Dna      GTGGTGCAAGTGGGCTAAGGATGGGCTGCTTCTGGGTCCAAACCCGAAGATGCCAGGCTTC
                   | | | | | | | | | | | | | | | | | | | | | |
Af035835      GCGGTGCAATGGGCCAAAGATGGGCTGCTCCTGGGCCCCGACCCAGGATCCCAGGCTTC
                   190      200      210      220      230      240

                                230      240      250      260      270      280
Hn540-1.Dna      CCGAGGTACAGCCTGGAAGGAGATCGTGCTAAAGGCGAGTTCACCTGCTTATTGAAGCC
                   | | | | | | | | | | | | | | | | | | | | | |
Af035835      CCGAGGTACCGCCTGGAAGGGGACCCTGCTAGAGGTGAATTCCACCTGCACATCGAGGCC
                   250      260      270      280      290      300

                                290      300      310      320      330      340
Hn540-1.Dna      TGTGACCTCAGTGATGACGCAGAGTATGAATGCCAAGTCGGCCGCTCAGAGTTGGGTCCC
                   | | | | | | | | | | | | | | | | | | | | | |
Af035835      TGTGACCTCAGCGATGACGCGGAGTATGAGTGCCAGGTTCGGCCGCTCTGAGATGGGGCCC
                   310      320      330      340      350      360

                                350      360      370      380      390      400
Hn540-1.Dna      GAGCTTGTGTCTCCTAAAGTAATCCTCTCCATTCTAGTTTCCCCCAAGGTGCTTCTGTTG
                   | | | | | | | | | | | | | | | | | | | | | |
Af035835      GAGCTCGTGTCTCCAGAGTGATCCTCTCCATCCTGTTCTCCCAAGCTGCTCCTGCTG
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                                410      420      430      440      450      460
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Af035835      ACCCCAGAGGCAGGCACCATGGTACCTGGGTAGCTGGGCAGGAGTACGTGGTCAACTGT
                   430      440      450      460      470      480

                                470      480      490      500      510      520
Hn540-1.Dna      GTGTCTGGGGATGCAAACAGCACCTGACATCACCTTCATCCAGAGTGGACGAACATA
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Af035835      GTGTCTGGGGACGCGAAGCCAGCACCTGACATCACCATTCCTGAGTGGACAGACAATA
                   490      500      510      520      530      540

                                530      540      550      560      570      580
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Af035835	GACAGTGGACTGGCTGACAAAGGGACCCAGCTTCCCATCACTACCCAGGTCTCCACCAG	3070	3080	3090	3100	3110	3120
Hn540-1.Dna	GCTCCTGAAGACACAGACCACCAGCTGCCCACAGAGCTGCCTCCAGGACCCCCAAGGCTG	3110	3120	3130	3140	3150	3160
Af035835	CCTTCTGGAGAACCTGAAGACCAGCTGCCCACAGAGCCACCTTCAGGACCCTCGGGGCTG	3130	3140	3150	3160	3170	3180
Hn540-1.Dna	CCCCTGCTGCCTGTGCTCTTTGCAGTTGGTGGTCTTCTGCTGCTCTCCAATGCCTCCTGT	3170	3180	3190	3200	3210	3220
Af035835	CCCCTGCTGCCTGTGCTGTTGCTCTTGGGGGGCTTCTGCTCCTCTCCAATGCCTCCTGT	3190	3200	3210	3220	3230	3240
Hn540-1.Dna	GTTGGGGGTCTCCTCTGGCGGAGAAGACTGAGGCGCCTTGCTGAGGAGATCTCAGAGAAG	3230	3240	3250	3260	3270	3280
Af035835	GTCGGGGGGGTCTCTGGCAGCGGAGACTCAGGCGTCTTGCTGAGGGCATCTCAGAGAAG	3250	3260	3270	3280	3290	3300
Hn540-1.Dna	ACAGAGGCAGGGTCGGAGGACAGGATCAGGAATGAATATGAGGAGAGTCACTGGACT	3290	3300	3310	3320	3330	3340
Af035835	ACAGAGGCAGGGTCGGAAGAGGACCGAGTCAGGAACGAATATGAGGAGAGCCAGTGGACA	3310	3320	3330	3340	3350	3360
Hn540-1.Dna	GGGGACCGGGACACGAGAAGCTCCACGGTTAGCACAGCAGAAAGTGGACCCAAATTACTAC	3350	3360	3370	3380	3390	3400
Af035835	GGAGAGCGGGACACTCAGAGCTCCACGGTCAGCACAAACAGAGGCAGAGCCGTATTACCGC	3370	3380	3390	3400	3410	3420
Hn540-1.Dna	TCCATGAGGGACTTCAGCCCCCAGCTTCCCCAACACTGGAGGAGGTGCTGTATCACCAA	3410	3420	3430	3440	3450	3460
Af035835	TCCCTGAGGGACTTCAGCCCCCAGCTGCCCCGACGCAGGAGGAGGTGTCTTATTCCTCGA	3430	3440	3450	3460	3470	3480
Hn540-1.Dna	GGTGCTGAAGGCGAGGACATGGCCTTCCCCGACACCTGCATGATGAAGTGGAGAGAGCC	3470	3480	3490	3500	3510	3520
Af035835	GGTTTCACAGGTGAAGATGAGGATATGGCCTTCCCTGGGCACTTGTATGATGAGGTAGAA	3490	3500	3510	3520	3530	3540

Hn540-1.Dna
Gcg Geneseq D:Z25338

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ID      Z25338 standard; cDNA; 4285 BP.
AC      Z25338;
DT      17-DEC-1999 (first entry)
DE      Human nephrin nucleotide sequence.
KW      Human; nephrin; NPHS1 gene; basement membrane disease; proteinuria;
KW      nephrotic syndrome; kidney disease; diagnosis; clinical nephrology;
KW      glomerular filtration barrier; glomerulonephritis; ss.
OS      Homo sapiens.
FH      Key          Location/Qualifiers
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FT      sig_peptide  1. .66
FT                      /*tag= b
FT                      /note= "putative signal peptide"
FT      mat peptide  67. .3723

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FT                               /*tag= d
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FT   misc_feature 3178..3258
FT                               /*tag= f
FT                               /note= "putative transmembrane domain"
PN   WO9947562-A1.
PD   23-SEP-1999.
PF   16-MAR-1999; U05578.
PR   18-MAR-1998; US-040774.

PA   (BIOS-) BIOSTRATUM INC.
PI   Tryggvason K, Kestila M, Lenkkeri U, Mannikko M;
DR   WPI; 1999-590967/50.
DR   P-PSDB; Y42167.
PT   New isolated nucleic acid (gene) encoding nephrin useful in methods for
PT   screening for susceptibility to basement membrane disease -
PS   Claim 1; Page 34-42; 60pp; English.
CC   The present sequence represents the NPHS1 gene which encodes nephrin.
CC   The present invention describes methods for the treatment of an
CC   individual with basement membrane disease by administration of the
CC   nephrin protein, as well as methods of gene therapy using therapeutic
CC   nucleic acid constructs containing an expressible nucleic acid with

CC   the NPHS1 sequence. NPHS1 appears to solely affect the kidney and
CC   therefore provides a unique model for studies on the glomerular
CC   filtration barrier. Abnormal function of the filtration barrier is a
CC   major complication in many clinically important kidney diseases such as
CC   nephrotic syndromes and glomerulonephritides and therefore this
CC   invention will help in the understanding of clinical nephrology.
CC   The identification of the NPHS1 gene immediately finds applications
CC   for diagnosis of the disease.
SQ   Sequence 4285 BP; 886 A; 1294 C; 1302 G; 803 T; . . .

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SCORES Init1: 11557 Initn: 12214 Opt: 12066 z-score: 17125.7 E(): 0

83.1% identity in 3474 bp overlap

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                                10      20      30      40
Hn540-1.Dna      ATGTCCAGTTTGACTCCCCTGCTGCTCATGGGAATGCTGACCTCAGGC
                                | | | | | | | | | | | | | | | | | |
Z25338      ATGGCCCTGGGGACGACGCTCAGGGCTTCTCTCCTGCTCCTGGGGCTGCTGACTGAAGGC
                                10      20      30      40      50      60

                                50      60      70      80      90      100
Hn540-1.Dna      CTGGCCGAGTCGCCAGTCCCCACCTCAGCACCTCGAGGCTTCTGGGCTCTGTCTGAAAAC
                                | | | | | | | | | | | | | | | | | | | | | |
Z25338      CTGGCGCAGTTGGCGATTCTGCCTCCGTTCCCGGGGCTTCTGGGCCCTGCCTGAAAAC
                                70      80      90      100      110      120

                                110      120      130      140      150      160
Hn540-1.Dna      CTGACTGCGGTGGAAGGGACAACAGTTAAGCTATGGTGCGGTGTCAGGGCCCCCTGGCAGT
                                | | | | | | | | | | | | | | | | | | | | | |
Z25338      CTGACGGTGGTGGAGGGGGCCTCAGTGGAGCTGCGTTGTGGGGTCAGCACCCCTGGCAGT
                                130      140      150      160      170      180

                                170      180      190      200      210      220
Hn540-1.Dna      GTGGTGCAGTGGGCTAAGGATGGGCTGCTTCTGGGTCCAAACCCGAAGATGCCAGGCTTC
                                | | | | | | | | | | | | | | | | | | | | | |
Z25338      GCGGTGCAATGGGCCAAAGATGGGCTGCTCCTGGGCCCGACCCAGGATCCCAGGCTTC
                                190      200      210      220      230      240

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Z25338 AATCCAGCCGGTGTCCACAGCGTGGGGCACAGAGACCCAGGCGGTGGCCCCGAGT
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Hn540-1.Dna 890 900 910 920 930 940
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910 920 930 940 950 960

Hn540-1.Dna 950 960 970 980 990 1000
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|||||
Z25338 AACAGCGTGTCTGCAGGGACCCAGGAGCACGGCATCACACTGCAGGTACCTTTCCCCCT
970 980 990 1000 1010 1020

Hn540-1.Dna 1010 1020 1030 1040 1050 1060
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Hn540-1.Dna 1430 1440 1450 1460 1470 1480
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1450 1460 1470 1480 1490 1500

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2110 2120 2130 2140 2150 2160

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2450 2460 2470 2480 2490 2500

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2870 2880 2890 2900 2910 2920
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2930 2940 2950 2960 2970 2980
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2990 3000 3010 3020 3030 3040
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3050 3060 3070 3080 3090 3100
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3230 3240 3250 3260 3270 3280
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3350 3360 3370 3380 3390 3400
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